

AMENDMENTS

Amendments to the Claims:

Please cancel claims 108-134, 139, 140 and 144-146 without prejudice or disclaimer. Please enter new claims 147-184 as set forth in the complete listing of the claims hereafter. This complete listing of the claims replaces previous claim listings.

147 (New). A process for preparing a substrate having an array of spots having matrix for matrix-assisted laser-desorption ionization (MALDI) mass spectrometry and no analyte, which comprises:

(a) depositing a defined and controlled 0.2 to 20 nanoliter volume of a solution comprising 3-hydroxypicolinic acid matrix, an evaporating solvent and no analyte at a plurality of discrete locations on the surface of a substrate; and

(b) evaporating the solvent, thereby forming an array of spots on the surface of the substrate comprising the matrix and no analyte.

148 (New). The process of claim 147, wherein the substrate comprises material selected from the group consisting of silica, glass, cellulose, silicon, metal, plastic, polymer and metal-grafted polymer.

149 (New). The process of claim 147, wherein the substrate comprises a flat surface, a flat surface with pits, a solid or porous bead, a membrane or a pin.

150 (New). The process of claim 147, wherein the substrate comprises a flat surface.

151 (New). The process of claim 147, wherein the substrate comprises silicon.

152 (New). The process of claim 147, wherein the substrate comprises a metal.

153 (New). The process of claim 147, wherein the substrate comprises a plastic.

154 (New). The process of claim 147, wherein the substrate comprises a membrane.

155 (New). The process of claim 147, wherein the substrate comprises a metal-grafted polymer.

156 (New). The process of claim 147, wherein the substrate is chemically functionalized.

157 (New). The process of claim 147, wherein the substrate is chemically functionalized with beads.

158 (New). The process of claim 147, wherein the substrate is chemically functionalized with a dendritic material.

159 (New). The process of claim 147, wherein the substrate is a chip.

160 (New). The process of claim 147, wherein the substrate is a silicon chip.

161 (New). The process of claim 147, wherein each spot is a flat disk.

162 (New). The process of claim 147, wherein the spot size is defined by square dimensions of 800 micrometers by 800 micrometers or less.

163 (New). The process of claim 147, wherein the spot size is defined by square dimensions of 450 micrometers by 450 micrometers or less.

164 (New). The process of claim 147, wherein each spot consists essentially of the matrix after the solvent has evaporated.

165 (New). The process of claim 147, wherein each spot consists of the matrix after the solvent has evaporated.

166 (New). The process of claim 147, wherein the solvent comprises water.

167 (New). The process of claim 166, wherein the solvent is water.

168 (New). The process of claim 147, wherein the solvent comprises CH_3CN .

169 (New). The process of claim 168, wherein the solvent is 50% CH_3CN .

170 (New). The process of claim 147, wherein the solution comprising the matrix consists essentially of the matrix and the evaporating solvent.

171 (New). The process of claim 147, wherein the solution comprising the matrix consists of the matrix and the evaporating solvent.

172 (New). The process of claim 147, wherein the solution comprising the matrix is a saturated matrix solution.

173 (New). The process of claim 147, wherein the solution comprising the matrix is a diluted matrix solution.

174 (New). The process of claim 147, wherein the solution is dispensed by an automated dispenser.

175 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle having a chamber and a transducer element for ejecting fluid from the chamber.

176 (New). The process of claim 174, wherein the transducer element is selected from the group consisting of piezoelectric, electric, electrorestrictive, magnetorestrictive, electromechanical transducers and the like.

177 (New). The process of claim 175, wherein the transducer element is a piezoelectric transducer.

178 (New). The process of claim 147, wherein the automated dispenser deposits the solution without touching the surface of the substrate.

179 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that comprises an interior chamber suitable for carrying a solution.

180 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that comprises a pin having a chamber of sufficient narrow bore to allow the chamber to at least partially fill with a solution by capillary action.

181 (New). The process of claim 147, wherein the automated dispenser deposits the solution by contacting the surface of the substrate.

182 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that comprises a solid shaft of material.

183 (New). The process of claim 147, wherein the automated dispenser comprises a vesicle that is rastered over the surface of the substrate.

184 (New). The process of claim 147, wherein the automated dispenser comprises a plurality of vesicles in an array.